

Application Serial No: 10/569,014
Responsive to the Office Action mailed on: September 19, 2008

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IN THE CLAIMS

DEC 17 2008

Amendments To The Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently Amended) An ultrasonic diagnostic system, comprising:
electroacoustic conversion means in which a plurality of sub-arrays, each composed of a plurality of electroacoustic transducers, are arranged at least two-dimensionally;
a sub-beam former that is provided on the sub-array basis, generates signals having different polarities with respect to a received signal from the electroacoustic transducer in the sub-array, obtains a first signal and a second signal by controlling amplitudes of the signals having different polarities of each electroacoustic transducer in the sub-array, followed by adding, imparts a delay time to only one of the first signal and the second signal to impart imparts a delay time difference corresponding to a quarter of one period of the received signal between the first signal and the second signal by delay means provided inside, and adds the first signal and the second signal to which the delay time difference is imparted; and
a main beam former for subjecting a signal output from the sub-beam former to delay addition.
2. (Original) The ultrasonic diagnostic system according to claim 1, wherein the delay means is capable of switching the delay time difference between a quarter of one period of a fundamental of the received signal and a quarter of one period of a harmonic of the received signal.
3. (Cancelled)
4. (Original) An ultrasonic diagnostic system, comprising:

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electroacoustic conversion means in which a plurality of sub-arrays each composed of a plurality of electroacoustic transducers are arranged at least two-dimensionally;

a sub-beam former that is provided on the sub-array basis, generates signals having different polarities with respect to a received signal from the electroacoustic transducer in the sub-array, and obtains a first signal and a second signal by controlling amplitudes of the signals having different polarities of each electroacoustic transducer in the sub-array, followed by adding, imparts a predetermined phase shift amount to one of the first signal and the second signal by phase shift means provided inside, and adds the first signal or the second signal to which the predetermined phase shift amount is imparted to each other; and

a main beam former for subjecting a signal output from the sub-beam former to delay addition.

5. (Original) The ultrasonic diagnostic system according to claim 4, wherein the phase shift means is composed of phase shift circuits in two stages, each having a phase shift amount of 45 degrees, and each of the phase shift circuits in two stages is configured so as to include a capacitor and a resistor.

6. (Currently Amended) An ultrasonic diagnostic system, comprising:

electroacoustic conversion means in which a plurality of sub-arrays each composed of a plurality of electroacoustic transducers are arranged at least two-dimensionally;

parallel adding means that is provided on the sub-array basis, generates signals having different polarities with respect to a received signal from the electroacoustic transducer in the sub-array, and obtains a first signal and a second signal by controlling amplitudes of the signals having different polarities of each electroacoustic transducer in the sub-array, followed by adding;

a first main beam former for subjecting a first signal added by the parallel adding means to delay addition;

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a second main beam former for subjecting a second signal added by the parallel adding means to delay addition;

delay means for imparting delaying either one of an output signal of the first main beam former and an output signal of the second main beam former so that a delay time difference corresponding to a quarter of one period of the received signal occurs between an-the output signal of the first main beam former and an-the output signal of the second main beam former; and

adding means for adding an output signal of the first main beam former and an output signal of the second main beam former, to which the delay time difference is imparted by the delay means.

7. (Currently Amended) An ultrasonic diagnostic system, comprising:

electroacoustic conversion means in which a plurality of sub-arrays each composed of a plurality of electroacoustic transducers are arranged at least two-dimensionally;

parallel adding means that is provided on the sub-array basis, generates signals having different polarities with respect to a received signal from the electroacoustic transducer in the sub-array, and obtains a first signal and a second signal by controlling amplitudes of the signals having different polarities of each electroacoustic transducer in the sub-array, followed by adding;

a first main beam former for subjecting a first signal added by the parallel adding means to delay addition;

a second main beam former for subjecting a second signal added by the parallel adding means to delay addition;

phase shift means for imparting a phase shift amount to either one of an output signal of the first main beam former and an output signal of the second main beam former so that a phase difference of 90 degrees occurs between an-the output signal of the first main beam former and an-the output signal of the second main beam former; and

adding means for adding an output signal of the first main beam former and an output signal of the second main beam former, to which the phase difference of 90 degrees is imparted by the phase shift means.